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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,294	06/20/2003	Tadaaki Ishikawa	16869S-084100US	6303

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EXAMINER	
PETKOVSEK, DANIEL J	

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/600,294	ISHIKAWA ET AL.	
	Examiner	Art Unit	
	Daniel J Petkovsek	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *application filed June 20, 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, and 10* is/are rejected.

7)☒ Claim(s) *8 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/20/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on two applications filed in Japan on 6/20/2002, and 4/17/2003. It is noted, however, that applicant has not filed a certified copy of the either application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

2. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on June 20, 2003, have been considered and made of record (note attached copy of forms PTO-1449).

Claim Objections

3. Claims 4, 6, and 8-10 are objected to because of the following informalities: regarding claims 4 and 6, "collimator lens" should read, "collimator *lenses*". Regarding claims 8-10, a number of minor problem exist in each claim. For example, "third mounting grooves" is never preceded by "second mounting grooves", and "fourth positioning grooves" is never preceded by "third positioning grooves". If Applicant's desire is to eliminate confusion between "mounting" and "positioning" grooves, please note this. Also regarding claims 8-10, a number of times, "groove" should read, "grooves". Regarding claim 8, the word "till" is used in the last two paragraphs. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shevchuk US 2003/0794998 A1, and further in view of Bellman et al. U.S.P. No. 6,633,700 B2.

Shevchuk US 2003/0794998 A1 teaches (ABS, Fig. 5A, [0027]-[0028]) a first substrate 12A having mounting grooves to hold optical fibers, positioning grooves 55 formed in the main surface of the substrate 12A, a second substrate 12B having mounting grooves to hold more optical fibers, and through holes, in which positioning members 44 are arranged between first positioning grooves 55 and first through holes.

Shevchuk US 2003/0794998 does not explicitly teach collimator lenses being placed in the mounting groove, in alignment with the optical fibers. Shevchuk '998 also does not teach using this optical system for a switching capability.

Bellman et al. U.S.P. No. 6,633,700 B2 teaches (ABS, Fig. 2) a stackable lens array optical component 10 in which collimating lenses 18 are placed in grooves in alignment with optical fibers 16, in which the optical system can be used in optical switching capabilities.

Since Shevchuk '998 and Bellman et al. '700 are both from the same field of endeavor, the purpose disclosed by Bellman et al. '700, to have collimating lenses in "mini-grooves" in an optical system capable of switching utility, would have been recognized by the pertinent art of Shevchuk '998.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Shevchuk '998 for the purpose of improving optical coupling performance by collimating optical signals efficiently and effectively between plural component in a function such as in optical switching.

Regarding claim 2, a plurality of positioning grooves exist. Regarding claim 3, the substrates can be made of silicon, having crystal properties.

Regarding claim 4, it is well known in the art to protect collimating lenses from outside wear and tear which could interrupt coupling performance. Using elastic materials to absorb blows and energy is a well known way to protect lenses from these outside ways to destroy coupling performance. A person having ordinary skill in the art at the time the invention was made would have recognized using elastic materials with a smaller elastic modulus than the substrate in order to protect and reduce optical error from the coupling system.

Regarding claim 5, the through holes are formed in the same side as the mounting grooves.

Regarding claim 6, lenses are formed in both substrates. Regarding claim 7, the pin 44 of Shevchuk '998 is higher than the fiber, and thus the respective collimating lens of Bellman et al. '700.

Regarding claim 10, hole 18 with pin 19 of Shevchuk '998, or element 14 of Bellman et al. '700 acts as a pressing mechanism to press and clamp the plurality of substrates in proper position with each other.

Allowable Subject Matter

7. Claims 8 and 9 are objected to for having minor informalities, but are otherwise allowable over the relevant prior art. The relevant prior art of record does not teach or reasonably suggest the *distance between relative positioning grooves or mounting grooves to be larger or smaller* at subsequent stacked substrates. See Figure 3 of application in which

staggered distances in the pin locations create distances larger or smaller from the stacked substrates.

Inventorship

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of stacked optical fiber assemblies: PTO-892 form references B, and D-J.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Petkovsek
February 5, 2005

AKM ENAYET ULLAH
PRIMARY EXAMINER